

### **Remarks**

Reconsideration of the present application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1-22 and 24-36 are pending in the application. No claims have been allowed. Claims 1, 32, 35, and 36 are independent. Claim 23 has been canceled. Claims 1-22 and 24-36 have been rejected. These rejections are respectfully traversed.

***Patentability of Claims 1-5 and 7 over Madden in view of Paterson and Ravichandran under 35 U.S.C. § 103(a)***

Claims 1-5 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,119,483 to Madden et al. ("Madden") in view of U.S. Patent No. 6,983,237 to Paterson et al. ("Paterson") and in further view of U.S. Patent No. 5,966,537 to Ravichandran ("Ravichandran"). These rejections are respectfully traversed.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP § 2142.)

Motivations to combine or modify references must come from the references themselves or be within the body of knowledge in the art. (MPEP § 2143.01.)

Independent claim 1 is directed to a method, and recites in part: "identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment."

In its rejection of independent claim 1, the Action relies on various passages in Madden. For example, the Action cites Madden at col. 18, lines 24-26: "the state silo receiving the state information controlling the operation of said instruction decode segment..." As defined in the corresponding specification, "state silos" are registers or queues that store state information for first and second pipeline segments (see col. 7, lines 21-23). Therefore, Madden is understood as describing a system that uses an instruction decoder segment and a first execution segment of a

pipelined processor, where the two segments have registers or queues (“state silos”) “that are operative during normal instruction execution to save a sufficient amount of state information to immediately restart the instruction decoder segment and the first execution segment by reloading the state information having been stored in the state silos” (see abstract). Neither the cited section nor any other section of Madden is understood to describe a first simulation model in a simulation environment or a second simulation model in a circuit design being simulated in the simulation environment, much less a transfer from the first simulation model to the second simulation model.

Thus, Applicants respectfully submit that Madden does not teach or suggest identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment, as recited in independent claim 1.

In its rejection of independent claim 1, the Action also relies on various passages in Paterson, but Applicants respectfully submit that Paterson does not cure the deficiencies of Madden. For example, the Action cites Paterson at col. 10, lines 33-34: “a simulation engine to perform first and second simulation operations.” Applicants respectfully submit, however, that neither the cited section nor any other section of Paterson is understood to describe a first simulation model in a simulation environment or a second simulation model in a circuit design being simulated in the simulation environment, much less a transfer from the first simulation model to the second simulation model.

Thus, Applicants respectfully submit that Paterson does not teach or suggest identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment, as recited in independent claim 1.

In its rejection of independent claim 1, the Action also relies on various passages in Ravichandran, but Applicants respectfully submit that Ravichandran does not cure the deficiencies of Madden or Paterson. For example, the Action cites Ravichandran at col. 6, lines 39-41: “The simulation indicates which instructions will not be executed and the frequency at which the instructions are executed given the particular input data.” Applicants respectfully submit, however, that neither the cited section nor any other section of Ravichandran is understood to describe a first simulation model in a simulation environment or a second

simulation model in a circuit design being simulated in the simulation environment, much less a transfer from the first simulation model to the second simulation model.

Thus, Applicants respectfully submit that Ravichandran does not teach or suggest identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment, as recited in independent claim 1.

Therefore, Applicants respectfully submit that neither Madden, Paterson, nor Ravichandran, alone or in combination, teaches or suggests all of the claim limitations of independent claim 1 as required to establish a *prima facie* case of obviousness. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of independent claim 1 be withdrawn.

Dependent claims 2-5 and 7 depend directly or indirectly from independent claim 1 and are allowable for at least the reasons recited above with respect to their parent claim 1. Moreover, claims 2-5 and 7 recite combinations of features that are independently patentable. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejections of dependent claims 2-5 and 7 be withdrawn.

*Patentability of Claims 6, 8-22, and 24-31 over Madden in view of Paterson, Ravichandran, and Bailey under 35 U.S.C. § 103(a)*

Claims 6, 8-22, 24-31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,119,483 to Madden et al. (“Madden”) in view of U.S. Patent No. 6,983,237 to Paterson et al. (“Paterson”) and U.S. Patent No. 5,966,537 to Ravichandran (“Ravichandran”) and in further view of Bailey et al., “Hardware/Software Co-Simulation Strategies for the Future” (“Bailey”). These rejections are respectfully traversed.

Dependent claims 6, 8-22, and 24-31 depend directly or indirectly from independent claim 1 and are allowable for at least the reasons recited above with respect to their parent claim 1. Moreover, claims 6, 8-22, and 24-31 recite combinations of features that are independently patentable. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejections of dependent claims 6, 8-22, and 24-31 be withdrawn.

***Patentability of Claims 32-36 over Madden in view of Paterson and Bailey under  
35 U.S.C. § 103(a)***

Claims 32-36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,119,483 to Madden et al. (“Madden”) in view of U.S. Patent No. 6,983,237 to Paterson et al. (“Paterson”) and in further view of Bailey et al., “Hardware/Software Co-Simulation Strategies for the Future” (“Bailey”). These rejections are respectfully traversed.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP § 2142.)

Motivations to combine or modify references must come from the references themselves or be within the body of knowledge in the art. (MPEP § 2143.01.)

*Claims 32-34*

Independent claim 32 is directed to a method, and recites: “reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated” and “writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the second simulation model, said first simulation model and said second simulation model representing different versions of a same functionality in a circuit design being simulated.”

In its rejection of independent claim 32, the Action relies on Madden. Applicants respectfully submit, however, that nothing in Madden is understood to describe a first simulation model in a simulation environment or a second simulation model in the simulation environment, much less reading state information from the first simulation model or writing the state information to the second simulation model.

Thus, Applicants respectfully submit that Madden does not teach or suggest reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated or writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the

second simulation model, said first simulation model and said second simulation model representing different versions of a same functionality in a circuit design being simulated, as recited in independent claim 32.

In its rejection of independent claim 32, the Action also relies on various passages in Paterson, but Applicants respectfully submit that Paterson does not cure the deficiencies of Madden. For example, the Action cites Paterson at col. 10, lines 33-34: “a simulation engine to perform first and second simulation operations.” Applicants respectfully submit, however, that neither the cited section nor any other section of Paterson is understood to describe a first simulation model in a simulation environment or a second simulation model in the simulation environment, much less reading state information from the first simulation model or writing the state information to the second simulation model.

Thus, Applicants respectfully submit that Paterson does not teach or suggest reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated or writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the second simulation model, said first simulation model and said second simulation model representing different versions of a same functionality in a circuit design being simulated, as recited in independent claim 32.

In its rejection of independent claim 1, the Action also relies on various passages in Bailey, but Applicants respectfully submit that Bailey does not cure the deficiencies of Madden or Paterson. Applicants respectfully submit that neither the cited section nor any other section of Bailey is understood to describe, and thus does not teach or suggest, reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated or writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the second simulation model, said first simulation model and said second simulation model representing different versions of a same functionality in a circuit design being simulated, as recited in independent claim 32.

Therefore, Applicants respectfully submit that neither Madden, Paterson, nor Ravichandran, alone or in combination, teaches or suggests all of the claim limitations of independent claim 32 as required to establish a *prima facie* case of obviousness. Accordingly,

Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of independent claim 32 be withdrawn.

Dependent claims 33 and 34 depend directly or indirectly from independent claim 32 and are allowable for at least the reasons recited above with respect to their parent claim 32. Moreover, claims 33 and 34 recite combinations of features that are independently patentable. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejections of dependent claims 33 and 34 be withdrawn.

*Claim 35*

Independent claim 35 is directed to a machine readable medium having stored thereon machine executable instructions that when executed implement a method comprising: “identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment.”

Applicants respectfully submit that neither Madden, Paterson, nor Bailey teaches or suggests identifying state information comprising a transfer from a first simulation model in a simulation environment, said transfer being directed to a second simulation model in a circuit design being simulated in the simulation environment, as recited in independent claim 35.

Therefore, Applicants respectfully submit that neither Madden, Paterson, nor Bailey, alone or in combination, teaches or suggests all of the claim limitations of independent claim 35 as required to establish a prima facie case of obviousness. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of independent claim 35 be withdrawn.

*Claim 36*

Independent claim 36 is directed to a machine readable medium having stored thereon machine executable instructions that when executed implement a method comprising: “reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated” and “writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the second simulation model, said first simulation model and said second simulation

model representing different versions of a same functionality in a circuit design being simulated.”

Applicants respectfully submit that neither Madden, Paterson, nor Bailey teaches or suggests reading state information from a first simulation model in a simulation environment when a simulation domain of the first simulation model is deactivated or writing the state information to a second simulation model in the simulation environment prior to activation of a simulation domain of the second simulation model, said first simulation model and said second simulation model representing different versions of a same functionality in a circuit design being simulated, as recited in independent claim 36.

Therefore, Applicants respectfully submit that neither Madden, Paterson, nor Bailey, alone or in combination, teaches or suggests all of the claim limitations of independent claim 36 as required to establish a prima facie case of obviousness. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of independent claim 36 be withdrawn.

***Request for Interview***

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

***Conclusion***

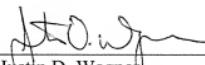
The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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